vation of LDH isoenzyme 5 is highly specific for myocardial injury.[12]

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Seminal Vesicular Cyst

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THE PURPOSE of this paper is to report the diagnosis and successful treatment of a seminal vesicular cyst in a patient and to review the literature which establishes this as the eighth such case reported.

Approximately 20 cases of seminal vesicular cysts have been reported. In many of the older reports the lesions apparently were Mullerian duct cysts.[2,5,6,18,20] More recent reports were based on roentgenographic evidence only, or on surgical demonstration of a cyst "in the area of the seminal vesicle."[7,8,12,13] Careful review of the literature disclosed only seven cases of clinically discovered and anatomically proved cysts of the seminal vesicle.*

Englisch[4] believed that seminal vesicular cysts developed from inflammatory closure of small diverticula. He also described various other types of cysts found in this area, such as those arising from Wolffian duct remnants and generally located in the region of the vas deferens at the posterolateral aspect of the bladder, as noted in the report published by Lund and Cummings.[16] Other cysts arising from Mullerian duct remnants are usually midline in position and are attached to the posterior bladder wall; these are further discussed by Coppridge.[1] Cystic dilatation of the utricle may be secondary to stricture of its orifice as was noted in a case reported by Lubash.[15]

Voelcker,[22] Schwarzwald,[19] and Lloyd and Pranke[14] cautioned against making the diagnosis of seminal vesicular cyst solely from clinical findings and roentgenographic studies. They stressed that anatomic confirmation should be accomplished by surgical operation, demonstrating the cyst to be an integral part of the seminal vesicle. Spermatozoa are usually found in the cystic fluid, but their presence is not diagnostically imperative. Subsequent histopathologic confirmation of seminal vesicular tissue in the wall of the cyst represents final verification.

Report of a Case

A 36-year-old white man, an avowed homosexual, entered Mount Zion Hospital and Medical Center, San Francisco, 24 August 1966 with a six-week history of persistent, painless bloody urethral discharge which made "nickel-sized bright red spots" on his underwear. For several days before admission he had had vague suprapubic discomfort. There were no lower urinary tract symptoms nor gross hematuria nor history of tuberculosis.

The patient had been put in hospital by another physician five weeks previously for evaluation of the same complaints. Microscopic hematuria was present then. Endoscopy had revealed an anterior urethral stricture which was promptly dilated. Retrograde pyelography at that time demonstrated bilateral renal calculi. Our urologic consultation was sought by the patient because the urethral discharge persisted. Past genitourinary history in-

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*Reference Nos. 3, 9, 10, 14, 21, 23.

cluded one untreated episode of transient hematuria four years earlier. There had been multiple episodes of gonococcal urethritis and one episode of syphilis. Apparently all episodes were promptly and adequately treated with penicillin.

On physical examination the only pertinent abnormality noted was indurated seminal vesicles bilaterally. The expressed prostatic secretion contained 4 to 6 leukocytes (and rarely erythrocytes) per high power field. The urine contained 3 to 5 erythrocytes per high power field. A hemogram was within normal limits, as were serum sodium, potassium, chloride, carbon dioxide, calcium, phosphorus, alkaline phosphatase, creatinine, and uric acid. A Veneral Disease Research Laboratory test was negative. Routine bacteriologic cultures of the urine produced no growth. Multiple acid-fast smears and culture studies were also negative for tuberculosis.

An infusion intravenous urogram demonstrated normal renal outlines, with multiple small medullary cysts, many of which contained calcific densities. Retrograde urethrography and voiding cystourethrography demonstrated no abnormality. Endoscopy under general anesthesia revealed a normal bladder and urethra. On retrograde ureteropyelography only a few of the renal medullary cysts filled. Differential phenosulfonphthalein excretion was normal. During bimanual recto-abdominal examination a movable, 4×6 cm cyst was palpated immediately above the indurated base of the right seminal vesicle. Subsequently, when the patient was awake, the lower end of this cyst was again palpated.

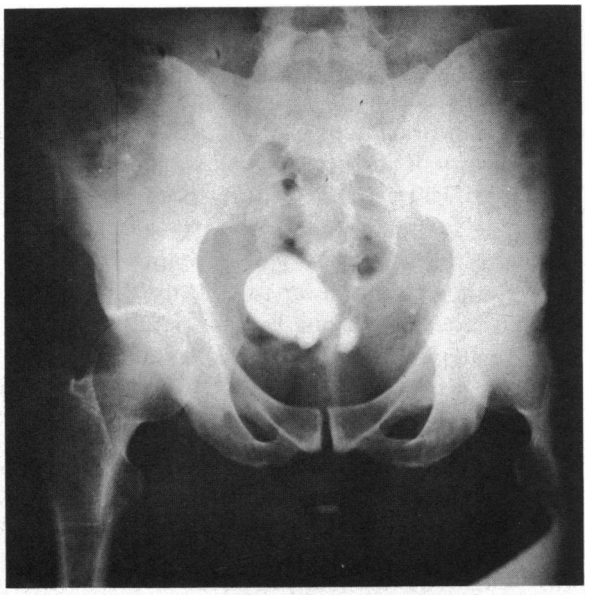

Figure 1.—The seminal vesicular cyst is well outlined. Note the retention of radiopaque material within the dilated ampulla of the vas deferens.

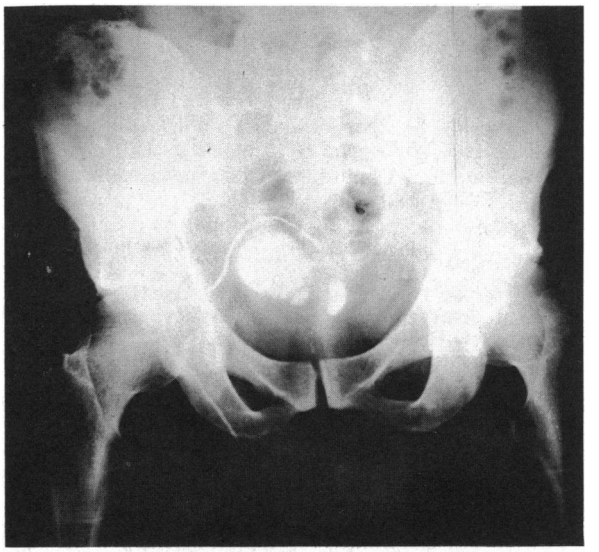

Figure 2.—Antegrade right seminal vesiculogram demonstrates the vas deferens and its dilated ampulla, and the initial filling of the seminal vesicular cyst.

A barium enema revealed a few scattered diverticula of the colon.

An antegrade seminal vesiculogram was performed with the contrast medium injected through a right trans-scrotal vasotomy. Fluid could not be aspirated before the injection. A cyst of the seminal vesicle was demonstrated (Figure 1), as well as dilatation of the ampulla of the vas deferens (Figure 2). There was no efflux of radiopaque material into the prostatic urethra.

On 1 September 1966, under general anesthesia, a suprapubic, extraperitoneal and extravesical exploration was undertaken. The entire cystic seminal vesicle was exposed, as was the dilated ampulla of the vas deferens, the right ureterovesical junction and the base of the prostate. The ampulla was inadvertently opened and clear, light-amber fluid escaped. The entire right seminal vesicle and the attached segment of vas deferens were excised. The postoperative course was uneventful and the patient was discharged from hospital 14 September 1966.

Gross examination of the specimen (Figure 3) revealed that the entire seminal vesicle had become cystic. It measured 3×5 cm. The vas deferens was normal except for dilatation of the ampulla. The cyst wall was 2 to 3 mm thick, with a relatively smooth inner surface (Figure 4). Typical cuboidal cell epithelium of the seminal vesicle was

intact in many areas. There was no significant infiltration of inflammatory cells.

During convalescence, the patient had normal erections and ejaculations. On several office visits spermatozoa were observed in the urinary sediment. Minimal microscopic hematuria has persisted. When last observed, in the fifth postoperative month, the patient had had no recurrence of urethral discharge.

Discussion

Of particular interest in the present case was the presenting complaint of sanguinous urethral discharge, unrelated to micturition or sexual activity and not associated with lower urinary tract obstructive or irritative symptoms. All the previous reports of verified cases of seminal vescular cyst specified lower urinary tract symptoms as the presenting complaint. The patient reported by Heller and Whitesel also had hematospermia.[10] In the present case the sanguinous urethral discharge probably arose from intracystic pressure, transmitted to the inflamed, strictured ejaculatory duct. It is probable that the hydrops of the seminal vesicle and dilatation of the ampulla of the vas deferens arose from atresia of the ejaculatory duct. The multiple episodes of gonococcal urethritis may have contributed to the ductal atresia. In a case he reported, Zinner[23] noted atresia of the ejaculatory duct resulting from extensive scar formation.

It is to be emphasized that cysts of the seminal vesicle are quite uncommon. Hyams, Kramer and McCarthy made postmortem studies of many hundreds of seminal vesicles in cadavers with gross evidence of inflammation in this region.[11]

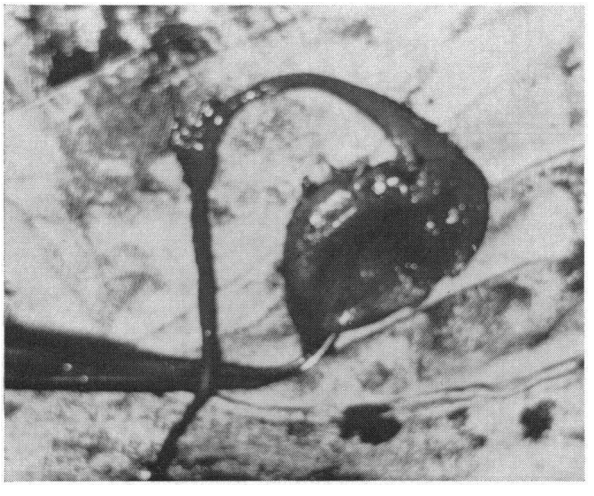

Figure 3.—Gross surgical specimen. The clamp is on the severed ejaculatory duct.

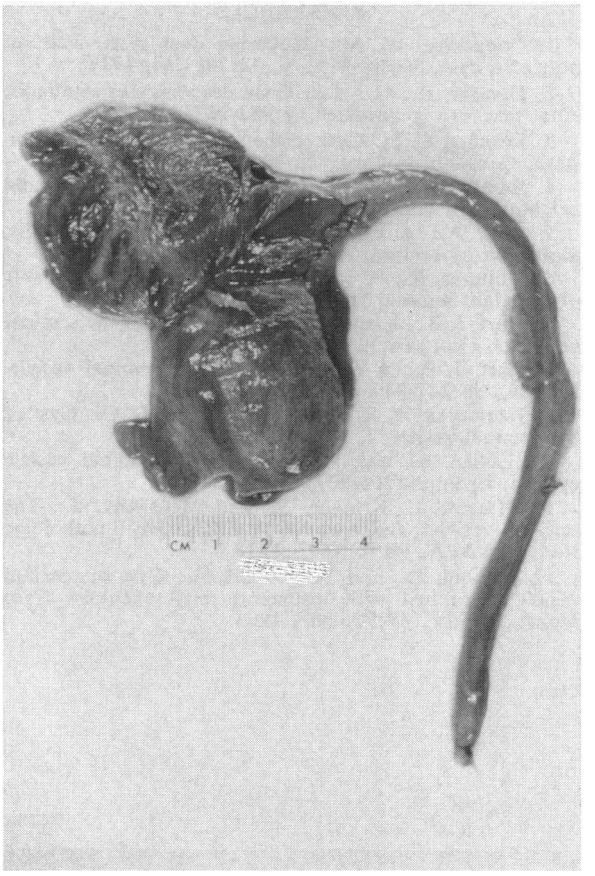

Figure 4.—The cystic seminal vesicle has been bivalved. Note the relatively smooth inner surface.

Cysts of the seminal vesicle were not found. They emphasized that the ejaculatory ducts were always involved in posterior urethral inflammation. McMahon studied 100 seminal vesicles and reported no cysts.[17] Nevertheless, we subscribe to the general thesis that the more diligent a search for a given pathological entity, the more frequently the condition will be encountered, including cysts of the seminal vesicle.

As a final and passing comment, it is noted that the authors of this report, two urologists and an internist were in agreement that the presence of medullary sponge kidneys in this patient was coincidental rather than a manifestation of a more generalized cystic syndrome.

Summary

A case of anatomically proved seminal vesicular cyst is reported, the eighth in the literature. The presenting symptom was bloody urethral discharge unrelated to micturition or sexual activity. A brief review of the literature was made, emphasizing anatomic confirmation as the diagnostic necessity.

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